

# इंटरनेट

# मानक

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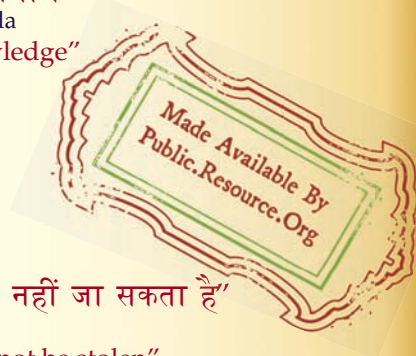
IS 9081 (2011): Automotive Vehicles - Valves and Valve Accessories for Pneumatic Tyres [TED 7: Automotive Tyres, Tubes and Rims]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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भारतीय मानक  
स्वचल वाहन — हवा भरे टायरों के लिए वाल्व एवम्  
वाल्व सहायक अंग — विशिष्टि  
( चौथा पुनरीक्षण )

*Indian Standard*  
AUTOMOTIVE VEHICLES — VALVES AND  
VALVE ACCESSORIES FOR PNEUMATIC TYRES —  
SPECIFICATION  
( *Fourth Revision* )

ICS 43.040.60; 83.160

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**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

## FOREWORD

This Indian Standard (Fourth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Automotive Tyres, Tubes and Rims Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published in 1979 and was revised in 1985, 1992 and 2001. In this revision, based on industry feedback, new valves and designations and valves such as A GO 582, B 35 157, B 46 357, B 47 245, screw-on universal tube valve and rubber covered tubeless snap-in valves have been included. Modifications in figures and tolerances have also been done in order to align them with the present worldwide practices. The cross references of valve designations are given in Annex A.

Valves designation comprising six character alpha-numeric code derived from their major functional as well as basic dimensional characteristics as per IS 10939 : 2000 'Designation system for tyre tube valves for automotive vehicles (*first revision*)', has been used in this standard.

For the purpose of deciding whether a particular requirements of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value, should be the same as that of the specified value in this standard.

*Indian Standard*

# AUTOMOTIVE VEHICLES — VALVES AND VALVE ACCESSORIES FOR PNEUMATIC TYRES — SPECIFICATION

(*Fourth Revision*)

**1 SCOPE**

This standard specifies the dimensions, materials, tests and acceptance standards for valves and valve accessories for tyre tubes as supplied for application with inner tubes, and valves for use with automotive vehicles including two wheeled vehicles, off-the-road vehicles and animal drawn vehicles. This standard gives those dimensions of commonly used valves which are important for fitment and interchangeability. Although the tests for valve cores have been included, the dimensions for valve core chambers have not been included since the same is covered in IS/ISO 20562 : 2004 'Tyre valves — ISO core chambers No. 1, No. 2 and No. 3'. Valve caps are also not covered in this standard since these are covered by IS 9453 : 1987 'Specification for valve caps for tyre tube valves for automotive vehicles (*first revision*)'.

**2 REFERENCES**

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
319 : 2007	Free cutting leaded brass bars, rods and sections ( <i>fifth revision</i> )
2500 (Part 1) : 2000	Sampling inspection procedures: Part 1 Attribute sampling plans indexed by acceptance quality level (AQL) for lot-by-lot inspection ( <i>second revision</i> )
2704 : 1983	Brass wires for cold-headed and machined parts ( <i>first revision</i> )
3168 : 1981	Specification for brass strip and foil for deep drawing ( <i>first revision</i> )

*IS No.**Title*

3400 (Part 2) : 2003	Methods of test for vulcanized rubbers: Part 2 Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD) ( <i>third revision</i> )
4170 : 1967	Brass rods for general engineering purposes
6912 : 2005	Copper and copper alloy forging stock and forgings ( <i>first revision</i> )
IS/ISO 4570 : 2002	Tyre valve threads — 5V1, 5V2, 6V1 and 8V1; — 9V1, 10V2, 12V1, 13V1; — 8V2, 10V1, 11V1, 13V2, 15V1, 16V1, 17V1, 17V2, 17V3, 19V1 and 20V1
10939 : 2000	Designation system for tyre tube valves for automotive vehicles ( <i>first revision</i> )
IS/ISO 14960 : 2004	Tubeless tyres-valves and components — Test methods

**3 CLASSIFICATION****3.1 Rubberized Valves**

- a) Truck valves;
- b) Passenger car valves;
- c) Motor cycle valves, scooter valves, moped (light duty) valves; and
- d) Off-the-road vehicles (OTR) valves, agricultural tractor (including power tiller) valves and animal drawn slow moving vehicle (ADV) valves.

**3.2 Repair and Replacement Valves**

- a) Screw-on type repair valves;
- b) Clamp-in type replacement valves; and
- c) Replacement rubber base valves with facing gum.

### 3.3 Supply Condition of Valves

- Unless otherwise specified, valve as per respective designation indicates straight form;
- Valve designation with suffix 'SB' indicates 'Single bent' form, and
- Valve designation with suffix 'DB' indicates 'Double bent' form.

## 4 DIMENSIONS AND DESIGN FEATURES

**4.1** Dimensional tolerances, in mm (*see* Fig. 1) shall be as follows:

- |                          |   |                  |
|--------------------------|---|------------------|
| a) Effective length      | : | + 1.00<br>- 2.00 |
| b) Rubber base diameter  | : | + 0<br>- 2.00    |
| c) Rubber base thickness | : | ± 0.50           |
| d) Bend height           | : | + 0<br>- 2.00    |
| e) Bend length           | : | ± 4.00           |
| f) Bend angle            | : | ± 2°             |

**4.2** The basic dimensions of the valves classified in **3.1** shall conform to those in Fig. 2 to Fig. 31. The basic dimensions of the valves classified in **3.2** shall conform to the design as specified by the purchaser (*see also* 7.2 and 7.3).

**4.3** Details of valve threads shall conform to IS/ISO 4570.

## 5 VALVE DESIGNATION

**5.1** Valves shall be designated in accordance with IS 10939.

**5.2** Reference may be made to IS 10939 for examples and details for designating widely used valves.

## 6 REQUIREMENTS FOR RUBBERIZED VALVES

### 6.1 Material

The metal stems of inserts may be made from brass conforming to IS 319 or IS 2704, IS 4170, IS 6912 or any other suitable brass material. The rubber base shall be butyl or butyl EPDM blends. Natural rubber may also be used, if specified by the purchaser.

### 6.2 Bendability of Valve Stem

**6.2.1** Truck valves shall be bendable to 90° and scooter valves to 55° and 90° with the help of the appropriate valve bending tools, without breaking or cracking during bending.

**6.2.2** Hand-bendable valves shall be bendable by hand up to 70° minimum without the help of tools and shall not crack or break during bending (*see* Fig. 10).

### 6.3 Hardness

The rubber forming the valve base shall be tested for hardness either by a shore Type A durometer, if practicable or an IRHD microhardness tester. The hardness shall be between 58 to 73 measured on the shore Type A durometer or on the IRHD Microhardness Tester. The testing shall be done in accordance with IS 3400 (Part 2).

### 6.4 Pull Out Strength of Rubber Base

Rubber covered valves when tested for stem pull out strength according to **6.4.1**, shall meet the minimum breaking load values specified in **6.4.2**.

#### 6.4.1 Procedure

The rubber base of the valve shall be clamped in a fixture and the cap thread or body thread shall be screwed on the threaded adapter on a suitable tensile testing machine. The hole in the fixture through which the valve comes out shall be 15 mm in diameter for moped valves (*see* Fig. 22), 22.2 mm in diameter in case of scooter and motor cycle valves (smaller base diameter) (*see* Fig. 18, 19, 23 and 24) and 31.8 mm diameter for all other valves and spuds. A direct pull shall be made at the rate of 15.0 cm/min until the rubber base separates from the stem. The minimum pull out values shall determine conformance of the quality to the acceptable standard.

**6.4.2** Minimum breaking (pull out) load values shall be as follows:

Sl No.	Valve Type	Valve Designation	Minimum Breaking Load (Pull Out Values) N
(1)	(2)	(3)	(4)
i)	Scooter valves	A 40 2 45	450
		A 41 1 45	450
		A 47 2 45	450
		A 50 1 45	450
ii)	Motor cycle valves	A 29 1 45	450
iii)	Moped valves	A 29 1 25	350
		A 29 1 32	350
iv)	Passenger car valves	B 35 3 57	450
		B 35 4 57	500
		B 35 5 57	700
		B 49 5 57	700
		B 46 3 57	450
		B 57 3 57	450
v)	Agricultural vehicle off-the-road (OTR) vehicle and animal drawn vehicle valves	B 35 4 57	500
		B 35 5 57	700
		B 20 5 63	900
		B 30 5 63	900
		AA 6 5 82	1 750

<i>Sl No.</i>	<i>Valve Type</i>	<i>Valve Designation</i>	<i>Minimum Breaking Load (Pull Out Values) N</i>
(1)	(2)	(3)	(4)
vi)	Truck and bus valves	A 97 5 82	1 750
		AA6 5 82	1 750
		AD4 5 82	1 750
		AB4 5 82	1 750
		AE7 5 82	1 750
		AG0 5 82	1 750
		B 35 5 57	700
		B 90 5 57	900
		A 83 5 82	1 750
		AB1 5 82	1 750
		AC3 5 82	1 750
		A 65 5 82	1 750
vii)	Spud for large bore	L 08 6 B4	2 000

### 6.5 Adhesion Test

Adhesion test is conducted to test the bond between metal and rubber. In all cases, adhesion shall be considered to be unacceptable, if the total area of separation between brass and rubber, or brass and cement, or cement and rubber is in excess of 41 mm<sup>2</sup>.

#### 6.5.1 Method of Checking

After subjecting the valve to the hot air treatment (*see 6.5.2*) the rubber cover over the stem or metal insert shall be cut down to the metal face. Each side of the cut rubber base or cover shall be gripped suitably and the rubber pulled away from the metal using pliers. As much rubber as possible, shall be removed from the base of the valve and the sides of the insert and the area of separation for rubber to metal bond shall be examined.

#### 6.5.2 Hot Air Treatment

The valves for the adhesion test (*see 6.5*) shall be kept in hot air at a temperature of  $165 \pm 2^\circ\text{C}$  for 10 min and allowed to cool down to room temperature before testing for adhesion.

### 6.6 Buffing

Valves shall be buffed (if required, by the purchaser) on the rubber base side which is to be vulcanized on to tubes. Buffing shall not be too rough or too smooth and the rubber base edge shall have a light feathery finish.

### 6.7 Workmanship

Valves shall be free from defects like incomplete rubber base, blisters larger than the size of a pin head, incomplete or damaged threads, foreign matter embedded in rubber base and cracks or cuts on

rubber base or on the metal stem. Excessive cured rubber flow from the junction of rubber and metal is permitted to a maximum of two threads on the valve insert. The through hole in the valve stem shall be perfectly clear. Bloom shall be avoided to the extent of impairing of adhesion of valve base with the tube.

### 6.8 Marking

Containers of valves shall be clearly marked with the following:

- Valve designation; and
- Indication of source of manufacturer or code.

If practicable the above markings shall also be carried out on the stem of the valve, or on the rubber.

### 6.9 Requirement for Tubeless Snap-in Valves

For test methods of rubber covered tubeless snap in valves, *see* IS/ISO 14960.

## 7 REQUIREMENTS FOR REPAIR AND REPLACEMENT OF VALVES

The requirements given in 6.1, 6.2 and 6.8 in addition to those given in 7.1 to 7.3 shall be applicable.

### 7.1 Clamp-in Type Replacement Valves

Valves shall be bent and assembled with the appropriate ring washers and hexagonal nuts, if required by the purchaser.

### 7.2 Replacement Rubber Base Valves with Facing Gum

Replacement rubber base valves shall have a uniform layer of facing gum as specified by the purchaser, cemented to the base of the valve to permit application to the buffed and cleaned valve hole locations of inner tube so that satisfactory adhesion is obtained when vulcanized. The exposed surface of the facing gum shall be protected with a sheet of polythene, the colour of which should be other than black.

### 7.3 Workmanship

The valves shall be examined for cracks, correctness of the bend, proper threads, incomplete filling of the head, etc.

## 8 VALVE CORE (*see* Fig. 32)

### 8.1 Materials

Valve core components may be manufactured from brass conforming to IS 319, IS 2704 or IS 3168 or any other materials as agreed to between the manufacturer and the purchaser. The spring shall be made from brass, phosphor bronze or stainless steel wire. The sealing washers material shall be synthetic rubber or polymer.



## 8.2 Valve Core Leakage

Valve cores shall not leak (in excess of one bubble per minute) when tested according to 8.2.1.

**8.2.1** The core shall be fitted into a tested valve stem with a torque of 0.23 to 0.56 Nm for core chamber No. 1 and No. 3 and 0.34 to 0.56 Nm for core chamber No. 2. Any desired pressure up to 900 kPa shall then be applied from the back of the valve while the tip of the valve is kept immersed in water, mouth downwards.

## 8.3 Valve Core Interchangeability

Valve core used for in-the-field replacement shall be interchangeable with the original valve cores without modification or damage. Valve cores shall be made to dimensions such that when installed and properly tightened in valves, the core pin shall not extend above the level of the tip end of the valve by more than 0.25 mm or below the tip end of the valve by more than 0.9 mm.

## 8.4 Acceptable Operating Temperatures

The temperatures range of the valve cores functioning shall be between  $-40^{\circ}\text{C}$  and  $100^{\circ}\text{C}$ .

## 8.5 Marking

Each valve core shall be marked with the indication of source of manufacture and the country of manufacture or a symbol indicating such information on the spring cup as shown in Fig. 32. Short cores may not be marked, if it is not practicable to do so.

## 8.6 Workmanship

Valve cores shall be free from burrs, foreign matter, damages, broken washer, cracked pin cups, cracked head, etc.

# 9 QUALITY ASSURANCE PROVISION

## 9.1 Criteria of Conformity and Sampling for Inspection and Tests

**9.1.1** For the purpose of ascertaining conformity to this standard, the extent of sampling and the criteria of conformity shall be subject to agreement between the purchaser and the manufacturer.

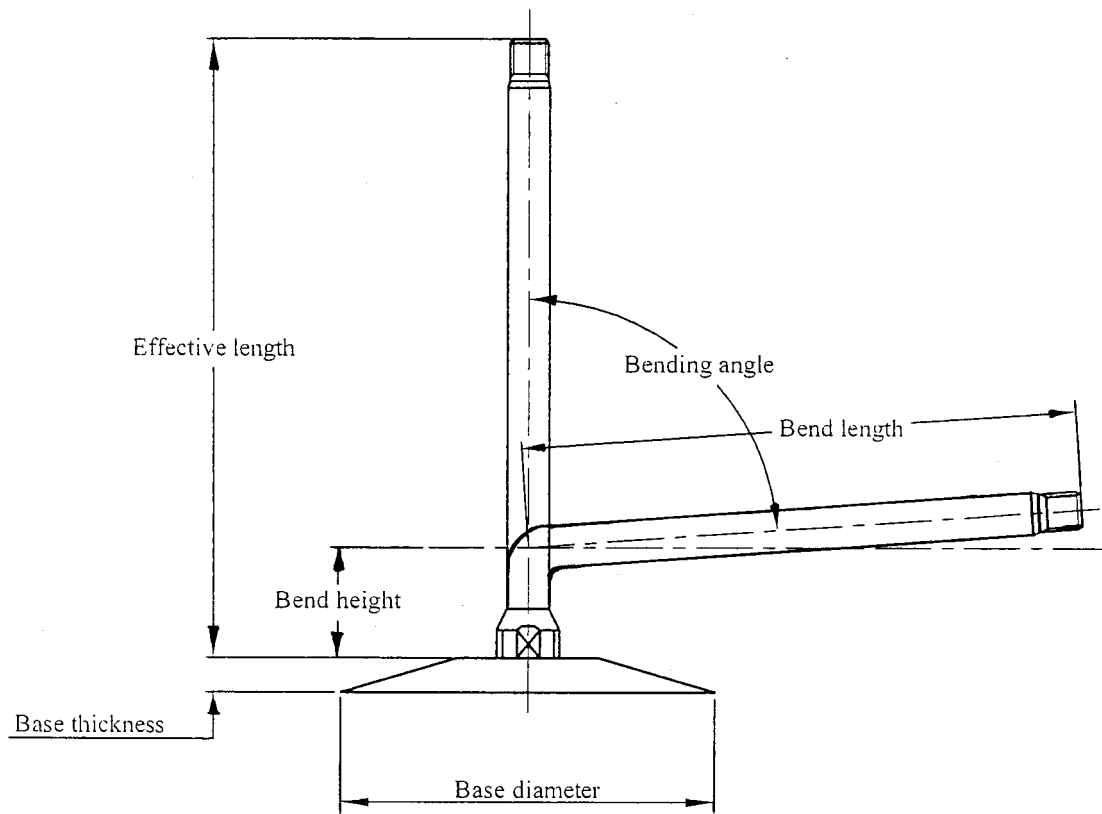
**9.1.2** Unless otherwise agreed, the manufacturer is responsible for carrying out all inspection and test requirements as specified herein.

**9.2** Sampling shall be according to IS 2500 (Part 1) and the samples shall be selected as per agreement between the manufacturer and the purchaser.

# 10 BIS CERTIFICATION MARKING

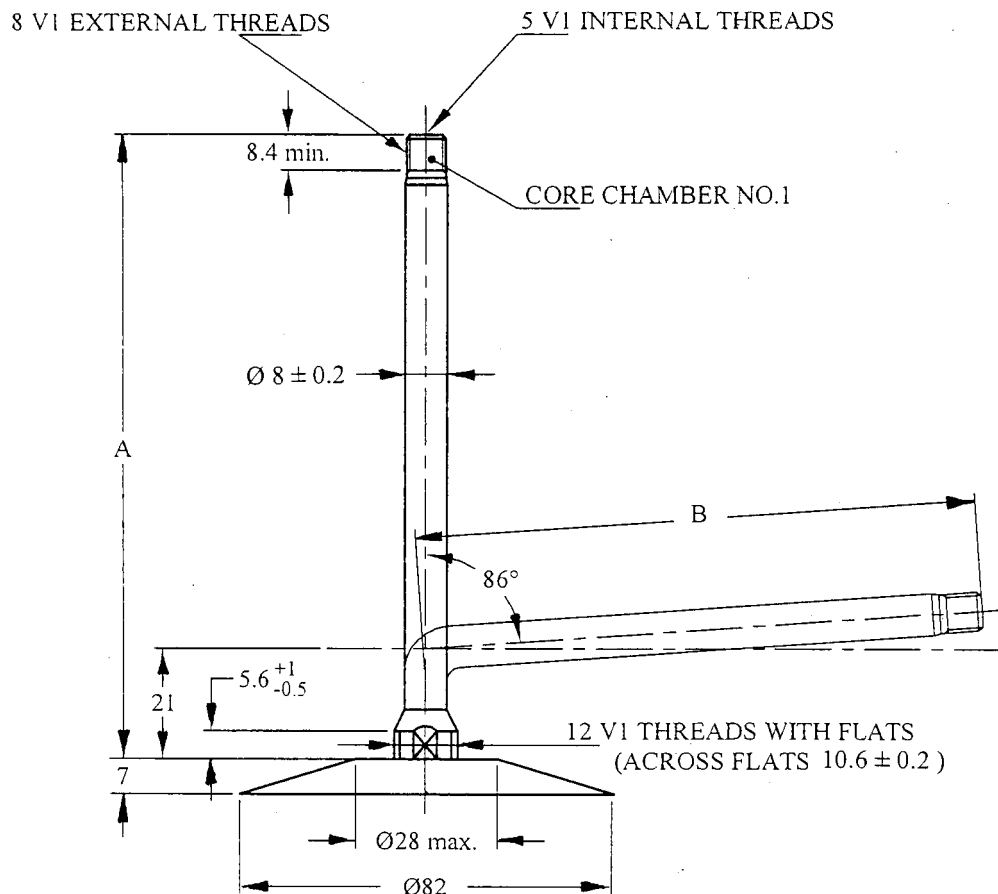
The product may also be marked with the Standard Mark.

**10.1** The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.



All dimensions in millimetres.

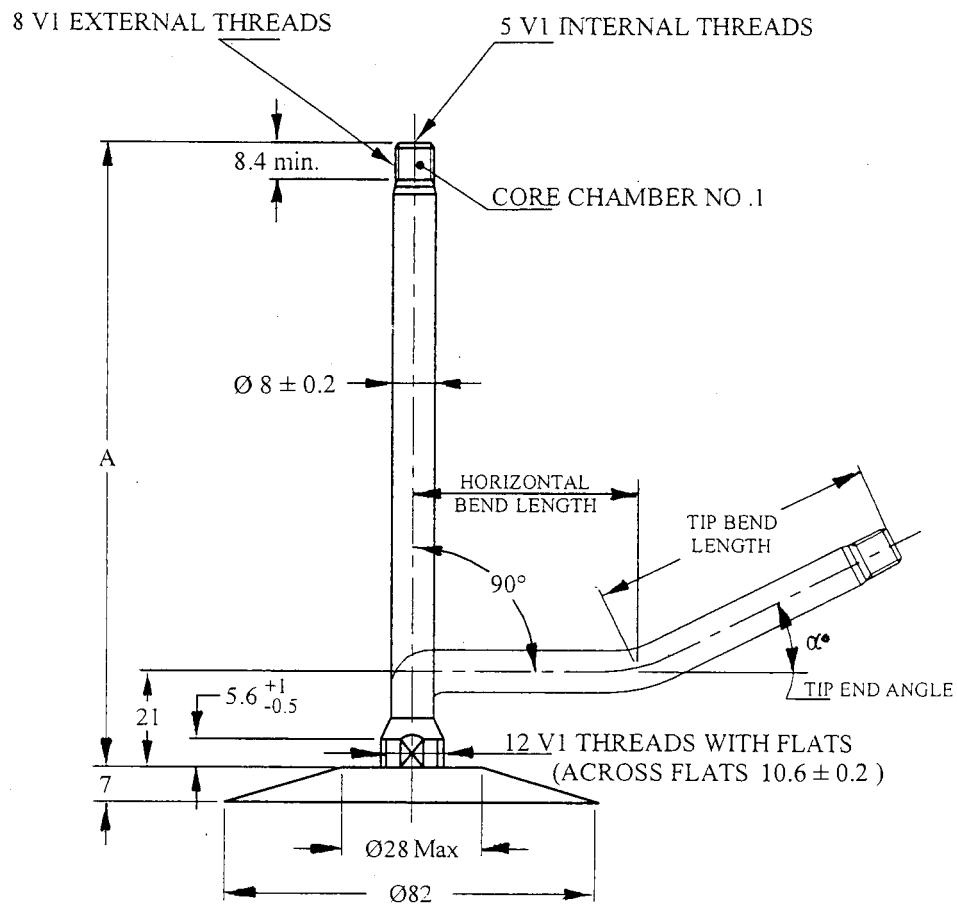
FIG. 1 DIMENSION TOLERANCES



Valve Designation <sup>1)</sup>	A	B
A 65 5 82	65	48
A 83 5 82	83	66
A 97 5 82	97	80
A A6 5 82	106	89
A B1 5 82	111	94
A B4 5 82	114	97
A C3 5 82	123	106
A D4 5 82	134	117
A E7 5 82	147	130
A G0 5 82	160	143
<sup>1)</sup> Designation with suffix 'SB' indicates single bent valve.		

All dimensions in millimetres.

FIG. 2 TRUCK AND BUS VALVES

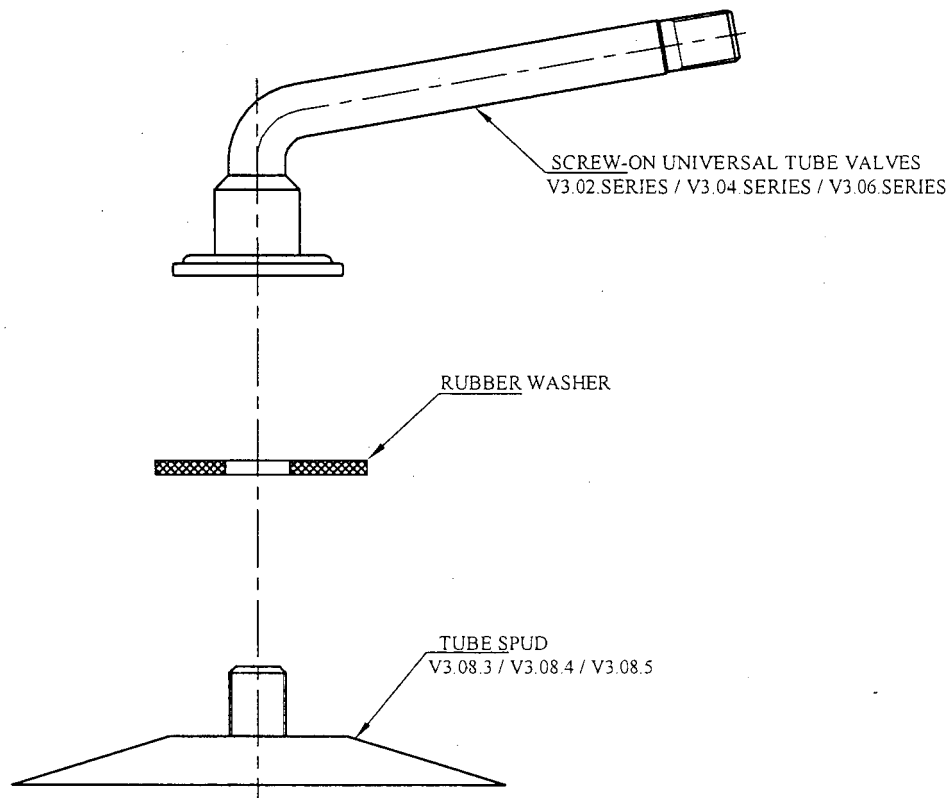


Valve Designation <sup>1)</sup>	A	Horizontal Bend Length	Tip End Angle ( $\alpha^\circ$ )	Tip Bend Length
A 97 5 82	97	35	31	48
A A6 5 82	106	40	31	51
A B4 5 82	114	46	26	54
A E7 5 82	147	63	21	70
A G0 5 82	160	75	21	70

<sup>1)</sup> Designation with suffix 'DB' indicates double bent valve.

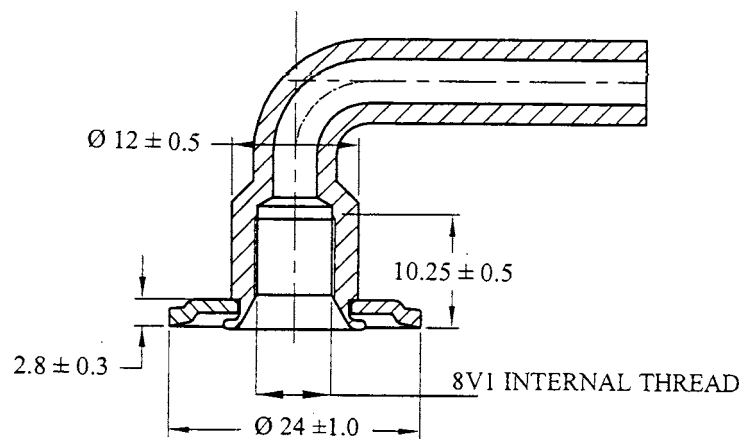
All dimensions in millimetres.

FIG. 3 TRUCK AND BUS VALVES



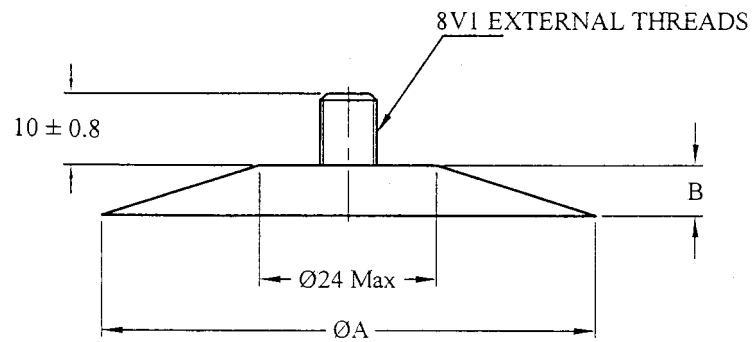
All dimensions in millimetres.

FIG. 4 SCREW-ON UNIVERSAL TUBE VALVES ASSEMBLY



All dimensions in millimetres.

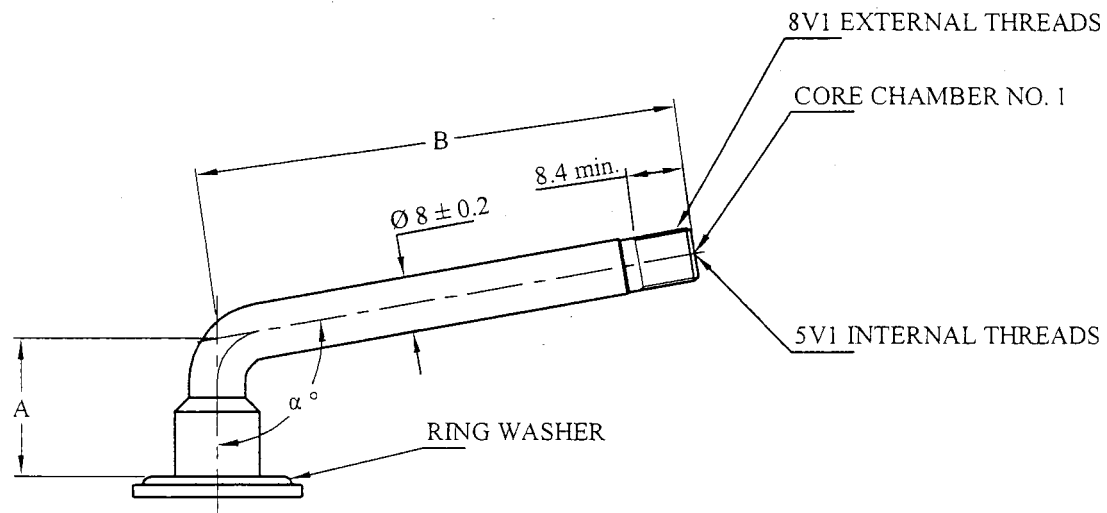
FIG. 5 SCREW-ON UNIVERSAL TUBE VALVE HEAD SHAPE TRUCK AND BUS VALVE



Valve Designation (ETRT0)	$\text{Ø}A$	$B$
V3.08.2	70	7
V3.08.3	80	8
V3.08.4	57	5

All dimensions in millimetres.

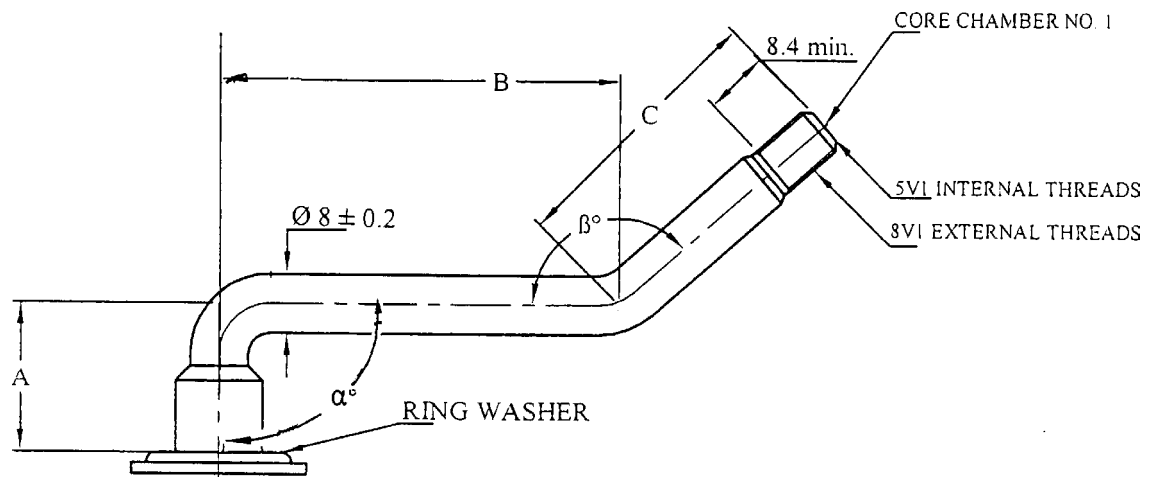
FIG. 6 SCREW-ON UNIVERSAL TUBE VALVE SPUDS — TRUCK AND BUS VALVES



Valve Designation (ETRT0)	A	B	$\alpha^\circ$
V3.02.7	22.5	71.5	100
V3.02.8	20.5	89.5	94
V3.02.9	20.5	99.5	94
V3.02.10	20.5	115	94
V3.02.11	20	126	98
V3.02.12	20.5	132	94
V3.02.14	20.5	138.5	94
V3.02.15	20.5	145.5	94
V3.02.16	20.5	149.5	90
V3.02.18	22.5	74.5	90
V3.02.19	20.5	60	94
V3.02.20	22.5	56.4	95
V3.02.26	20.5	105	94
V3.02.27	20	75	94
V3.02.29	20	127	94

All dimensions in millimetres.

FIG. 7 SCREW-ON UNIVERSAL TUBE VALVE SINGLE BENT — TRUCK AND BUS VALVES

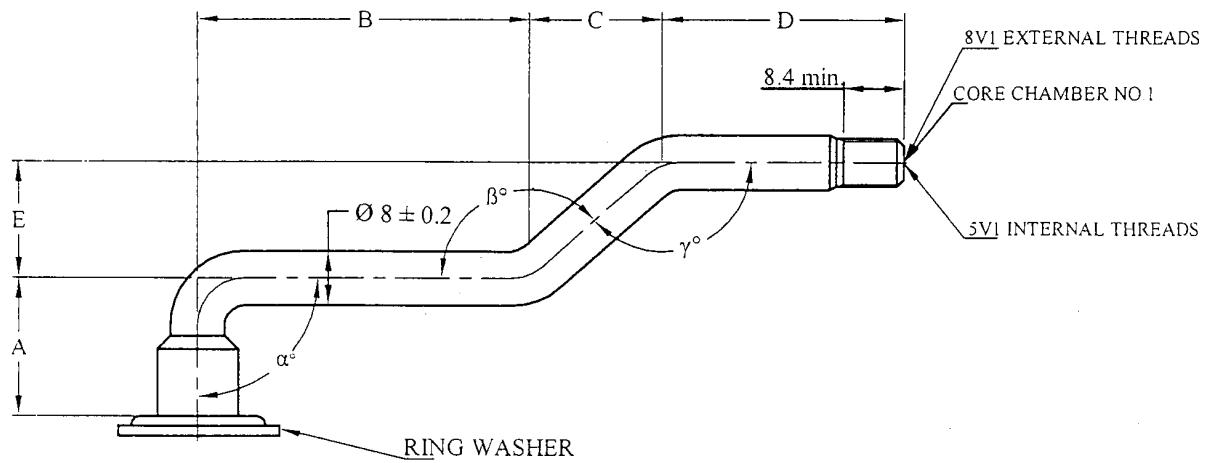


Valve Designation (ETRT0)	A	B	C	$\alpha^\circ$	$\beta^\circ$
V3.04.4	20	74	40	94	144
V3.04.5	20	76	47.5	90	153
V3.04.6	20	86	47.5	90	153
V3.04.10	20.5	47	53	90	154
V3.04.11	20.5	47	63.5	90	154
V3.04.15	20.5	42	38.5	90	120
V3.04.21	20	83	57	94	154
V3.04.25	20	80	47	94	164

All dimensions in millimetres.

FIG. 8 SCREW-ON UNIVERSAL TUBE VALVE DOUBLE BENT — TRUCK AND BUS VALVES

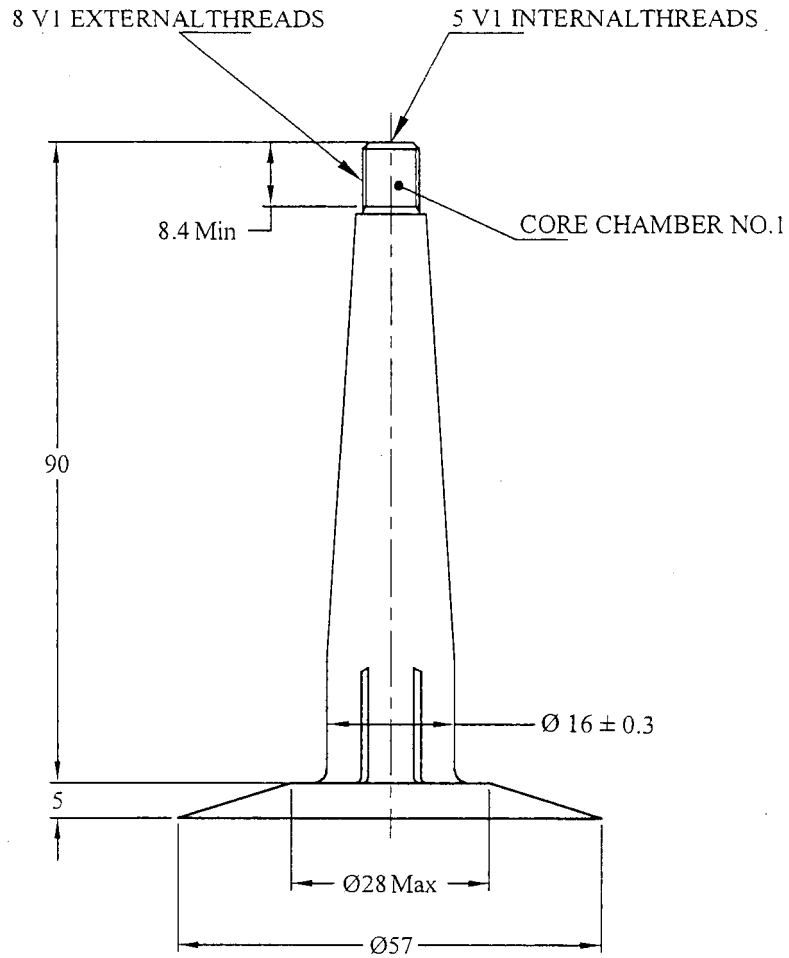




Valve Designation (ETRT0)	A	B	C	D	E	$\alpha^\circ$	$\beta^\circ$	$\gamma^\circ$
V3.06.5	20.5	62.5	19.5	49	17	90	139	139
V3.06.6	20	79.5	19.5	37.5	17	90	139	139
V3.06.7	20.5	45.5	18.5	42.5	17	90	137	137
V3.06.8	24.5	61.5	14.5	50.5	7.5	94	153	153
V3.06.9	20.5	67.5	19.5	54.5	17	90	139	139
V3.06.16	20	62	13	50	7	94	153	153
V3.06.17	20	75	13	50	7	94	153	153

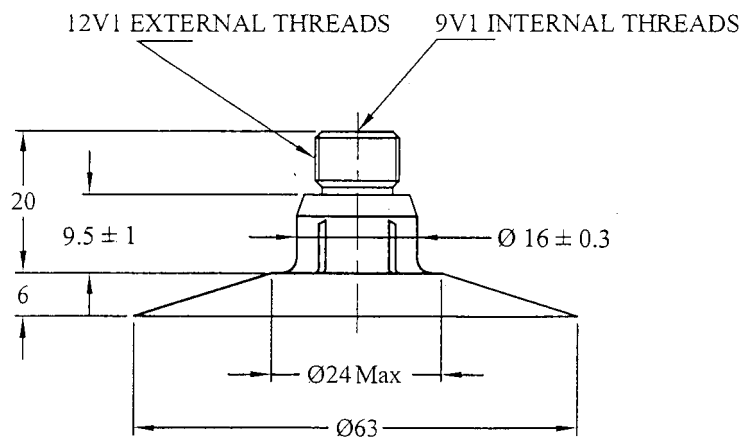
All dimensions in millimetres.

FIG. 9 SCREW-ON UNIVERSAL TUBE VALVE TRIPLE BENT — TRUCK AND BUS VALVES



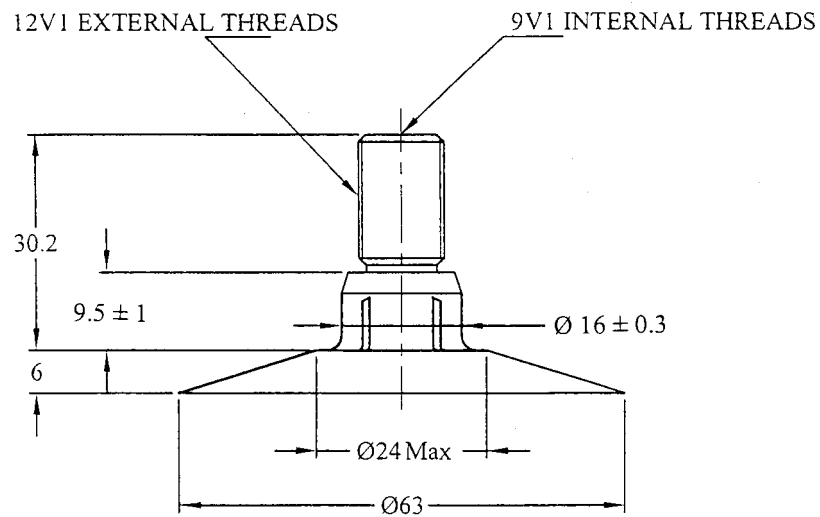
All dimensions in millimetres.

FIG. 10 LIGHT TRUCK VALVE B 90 5 57 (HAND BENDABLE)



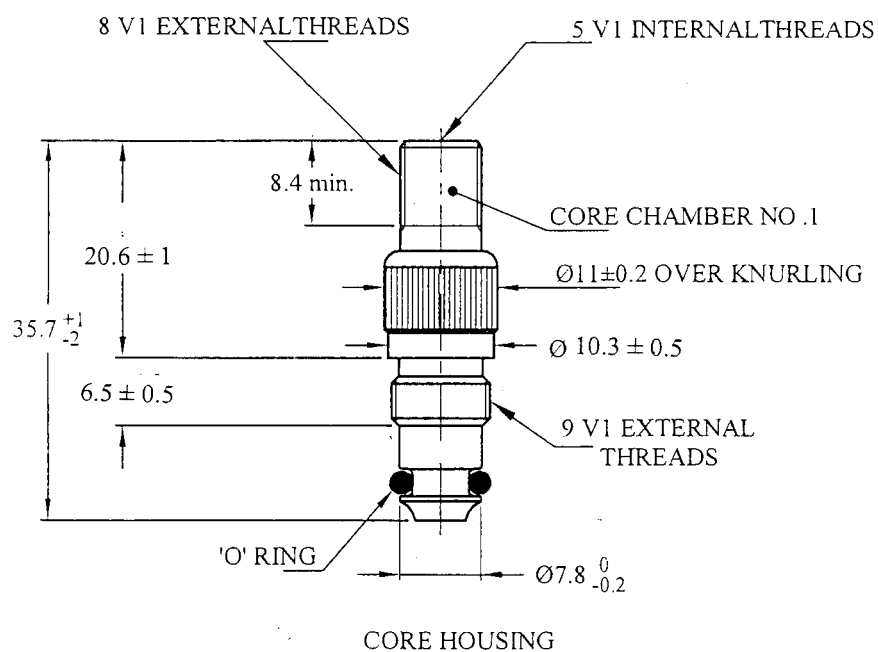
All dimensions in millimetres.

FIG. 11 TRACTOR VALVE B 20 5 63 AIR WATER FILLING TYPE  
(see Fig. 14 for Assembly)



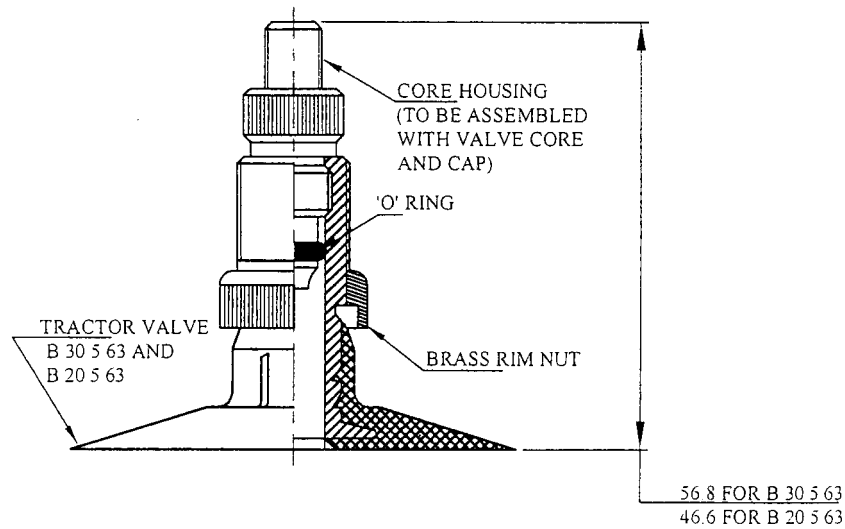
All dimensions in millimetres.

FIG. 12 TRACTOR VALVE B 30 5 63 AIR WATER FILLING TYPE  
(see Fig. 14 for Assembly)



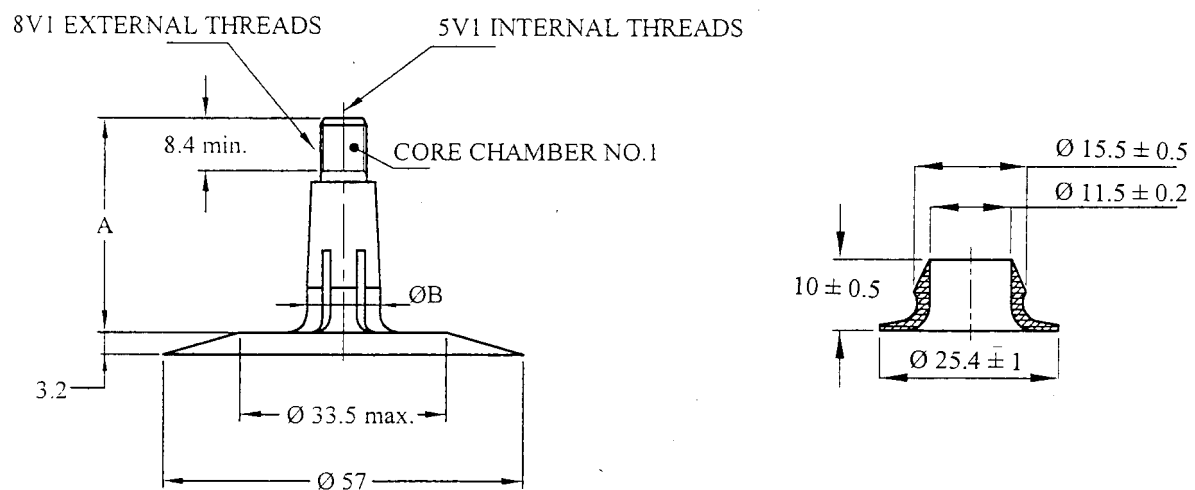
All dimensions in millimetres.

FIG. 13 CORE HOUSING, CH3



All dimensions in millimetres.

FIG. 14 TRACTOR VALVE B 20 5 63 AND B 30 5 63 ASSEMBLY

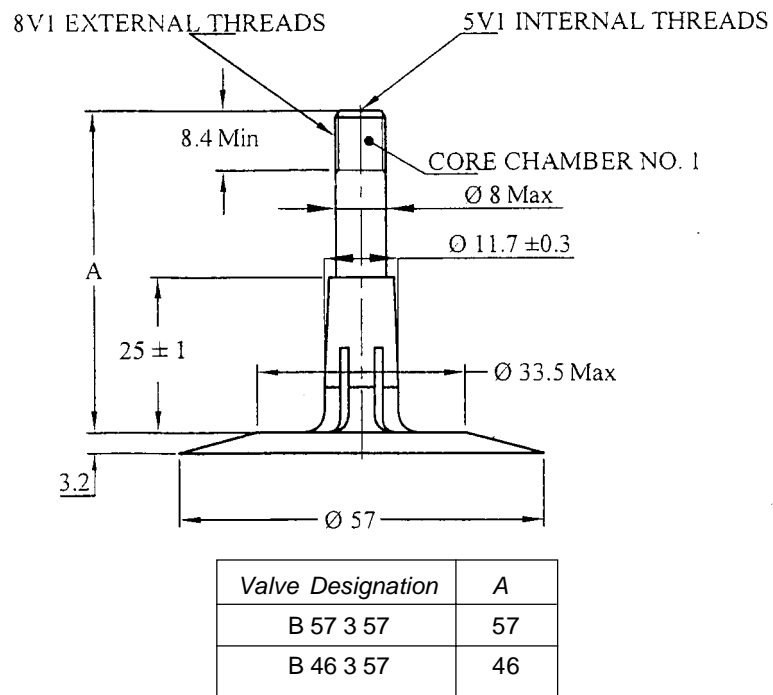


Valve Designation	A	B (±0.3)
B 35 3 57	35	11.7
B 35 4 57	35	13.1
B 35 5 57	35	16.5
B 49 5 57	49	16.5
B 35 1 57	35	9.1

NOTE — Plastic bushing to make up for *B* dimensions of B 35 5 57 valve where necessary, to suit old design rims of 13 to 15 nominal diameter having a valve hole of 15.9 mm.

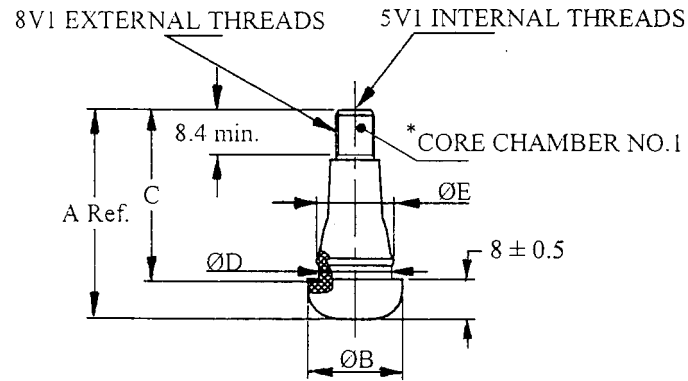
All dimensions in millimetres.

FIG. 15 RUBBER COVERED TUBE VALVE — PASSENGER CAR, JEEP, SCOOTER DERIVATIVES, FRONT TRACTOR, LIGHT TRUCK, TRACTOR IMPLEMENT, ANIMAL DRAWN AND FORK-LIFT



All dimensions in millimetres.

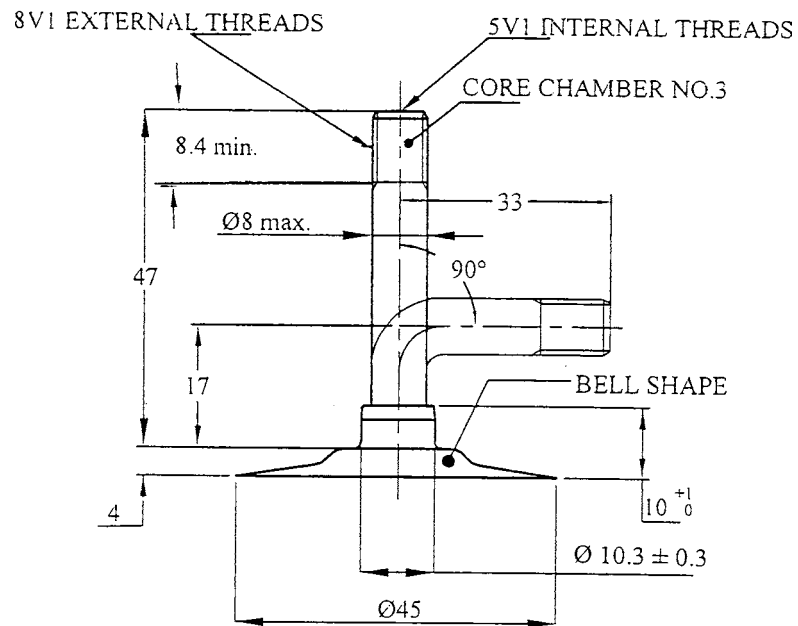
FIG. 16 RUBBER COVERED TUBE VALVES — PASSENGER CAR



Valve Designation	A	B ± 0.5	C <sup>+1</sup> <sub>-2</sub>	D	E <sup>+0.5</sup> <sub>0</sub>	Valve Hole Size in Rim (Ø)
F 25 3 19 <sup>1)</sup>	33.0	19.5	25.5	15.0, Min	16.0	11.3 <sup>+0.4</sup> <sub>0</sub>
F 35 3 19	42.5	19.5	35.0	15.0 ± 0.3	16.0	11.3 <sup>+0.4</sup> <sub>0</sub>
F 41 3 19	48.5	19.5	41.0	15.0 ± 0.3	16.0	11.3 <sup>+0.4</sup> <sub>0</sub>
F 54 3 19	61.5	19.5	54.0	15.0, Min	16.0	11.3 <sup>+0.4</sup> <sub>0</sub>
F 67 3 19	74.0	19.5	66.5	15.0, Min	16.0	11.3 <sup>+0.4</sup> <sub>0</sub>
F 49 3 19	56.5	19.5	49.0	15.0, Min	16.0	11.3 <sup>+0.4</sup> <sub>0</sub>
F 35 5 24	42.5	24.0	35.0	19.2, Min	16.0	15.7 <sup>+0.4</sup> <sub>0</sub>
F 54 5 24	61.5	24.0	54.0	19.2, Min	16.0	15.7 <sup>+0.4</sup> <sub>0</sub>
F 35 1 16	42.0	16.0	35.0	12.3, Min	13.2	8.8 <sup>+0.3</sup> <sub>0</sub>
NOTE — Products for use up to 450 kPa cold inflation pressure maximum and speed up to 210 km/h maximum.						
<sup>1)</sup> Core Chamber No. 3 for F 25 3 19.						

All dimensions in millimetres.

FIG. 17 RUBBER COVERED TUBELESS SNAP-IN VALVES

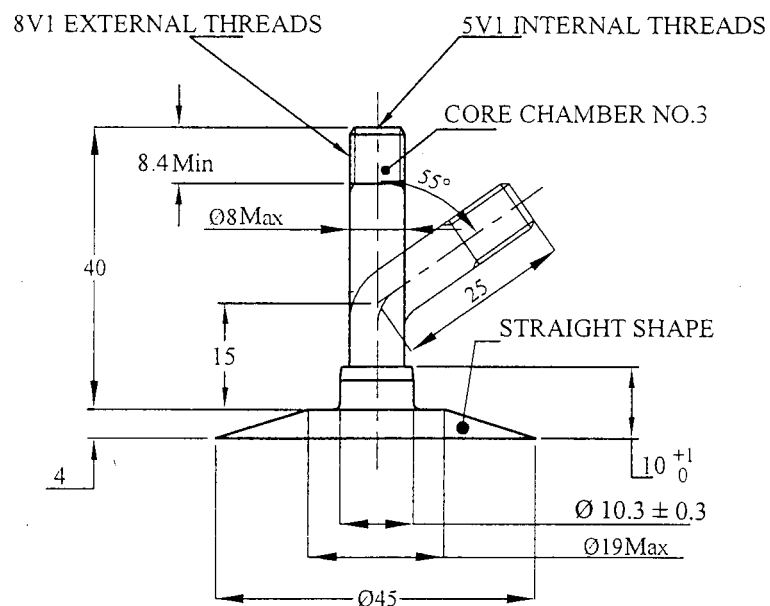


NOTES

- 1 These valves accommodate only the appropriate short core.
- 2 Designation with suffix 'SB' indicates single bent valve.

All dimensions in millimetres.

FIG. 18 SCOOTER VALVES A47 2 45  
(BASE-BELL SHAPE/STRAIGHT SHAPE)

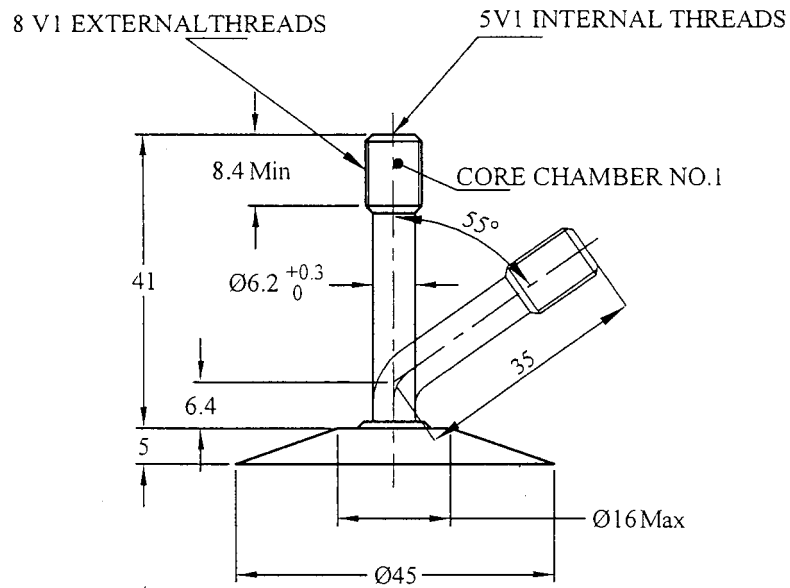


NOTES

- 1 These valves accommodate only the appropriate short core.
- 2 Designation with suffix 'SB' indicates single bent valve.

All dimensions in millimetres.

FIG. 19 SCOOTER VALVES A40 2 45  
(BASE-BELL SHAPE/STRAIGHT SHAPE)

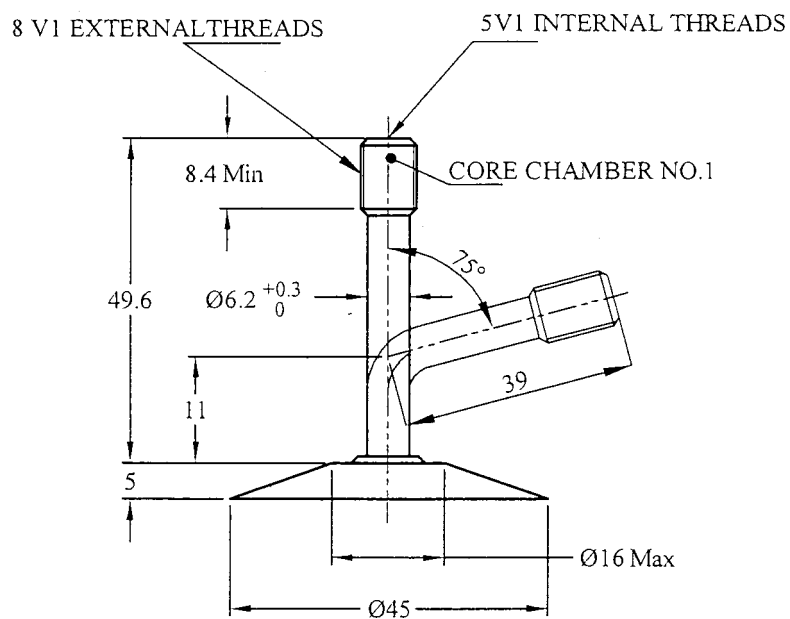


## NOTES

- 1 These valves are old type valves.
- 2 Designation with suffix 'SB' indicates single bent valve.

All dimensions in millimetres.

FIG. 20 SCOOTER VALVES A 41 1 45



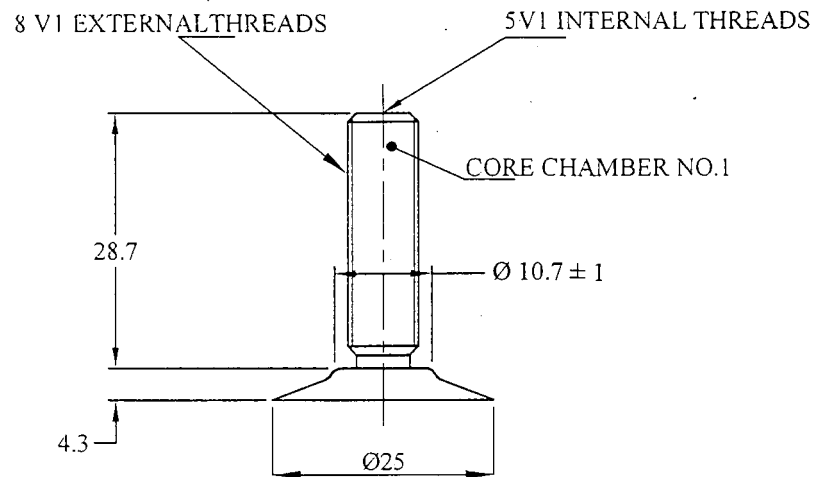
## NOTES

- 1 These valves are old type valves.
- 2 Designation with suffix 'SB' indicates single bent valve.

All dimensions in millimetres.

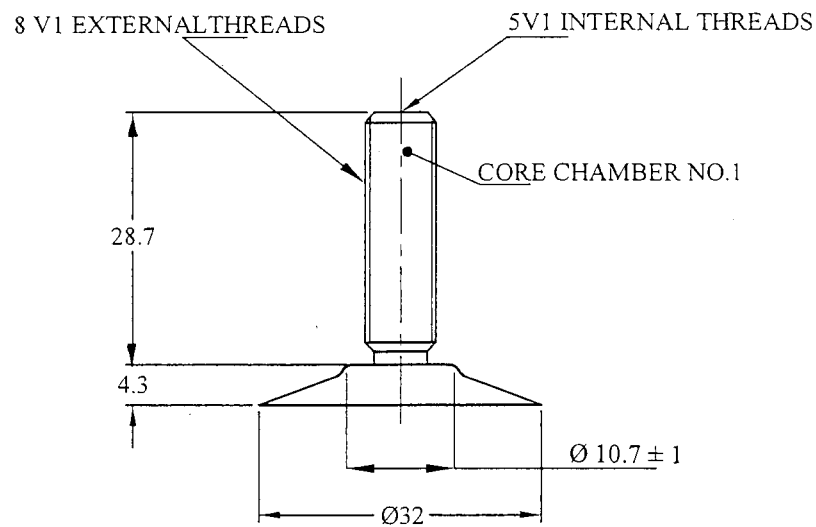
FIG. 21 SCOOTER VALVES A 50 1 45





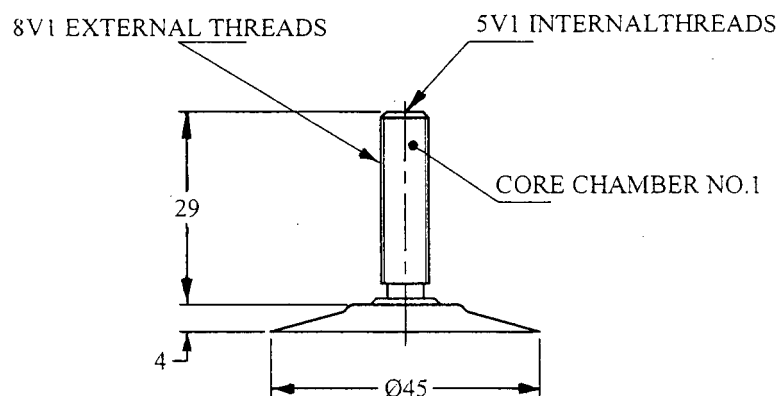
All dimensions in millimetres.

FIG. 22 MOPED VALVE A 29 1 25



All dimensions in millimetres.

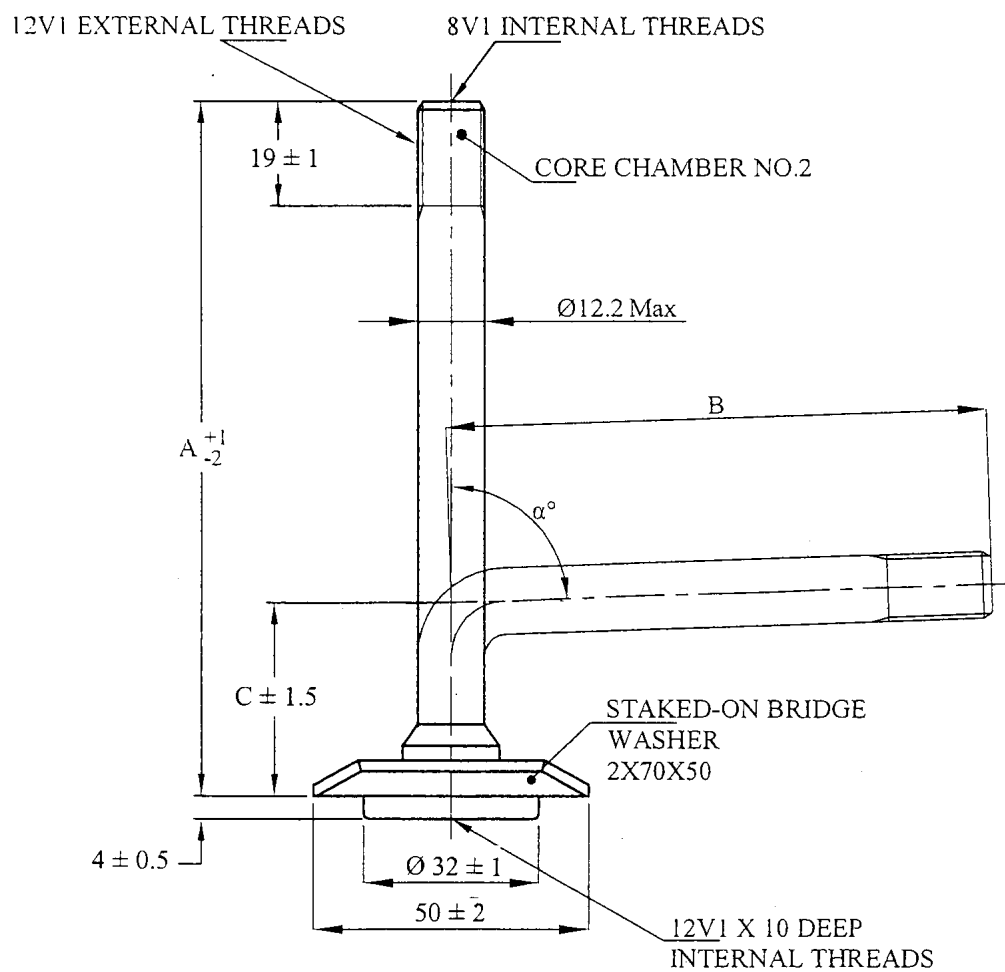
FIG. 23 MOPED VALVE A 29 1 32



NOTE — The top of rubber base shall have an approximate shape as shown to allow tubes at valve region to seat correctly with certain shallow well rims.

All dimensions in millimetres.

FIG. 24 MOTORCYCLE VALVE A 29 1 45

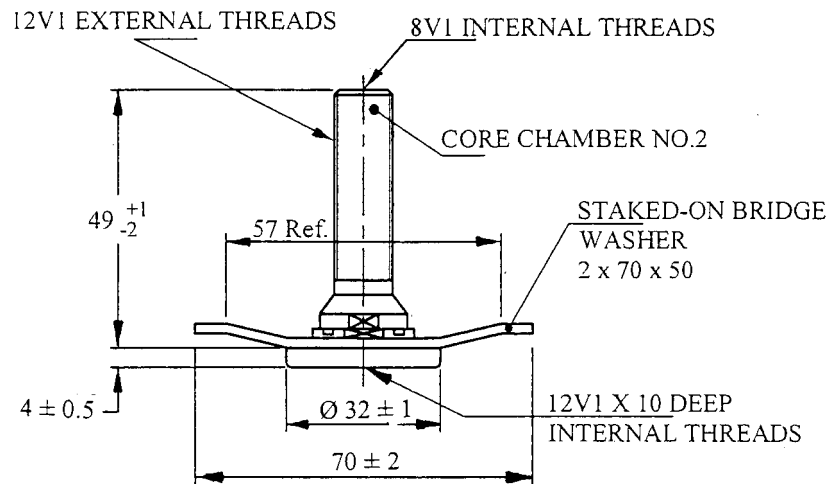


Valve Designation	A	B	C	α°
E D4 6 32	134	—	—	—
E D4 6 32 SB	—	105	35	88

NOTE — Available in straight or bent form.

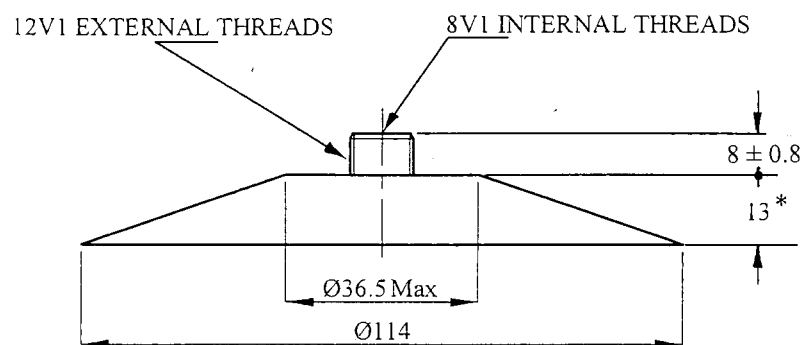
All dimensions in millimetres.

FIG. 25 LARGE BORE SCREW-ON TUBE VALVES (OTR) E D4 6 32 AND E D4 6 32 SB  
[For side elevation of bridge washer (see Fig. 26)]



All dimensions in millimetres.

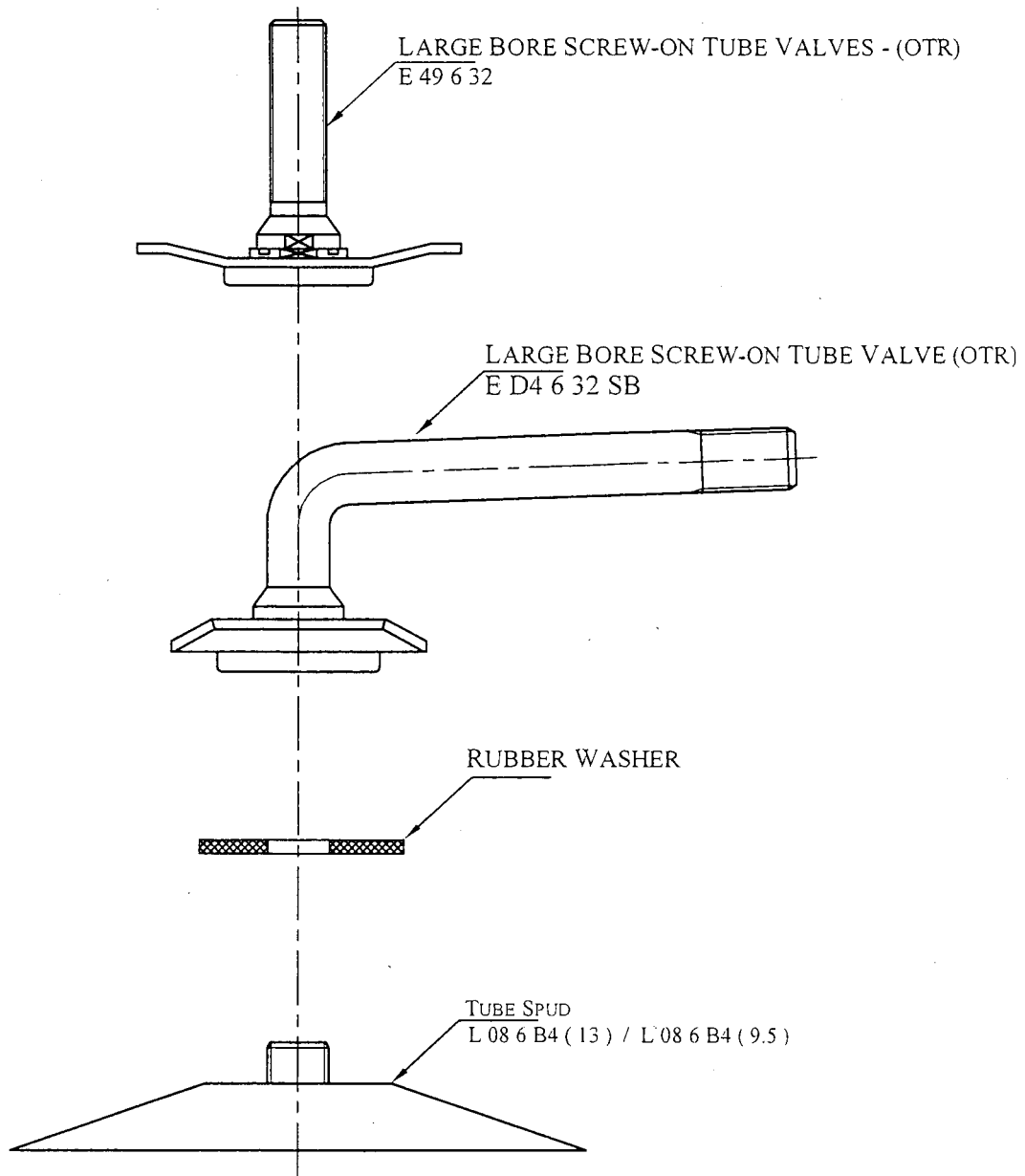
FIG. 26 LARGE BORE SCREW-ON TUBE VALVE — (OTR) E 49 6 32



NOTE — Valve available with rubber base thickness of 9.5 mm on special order.

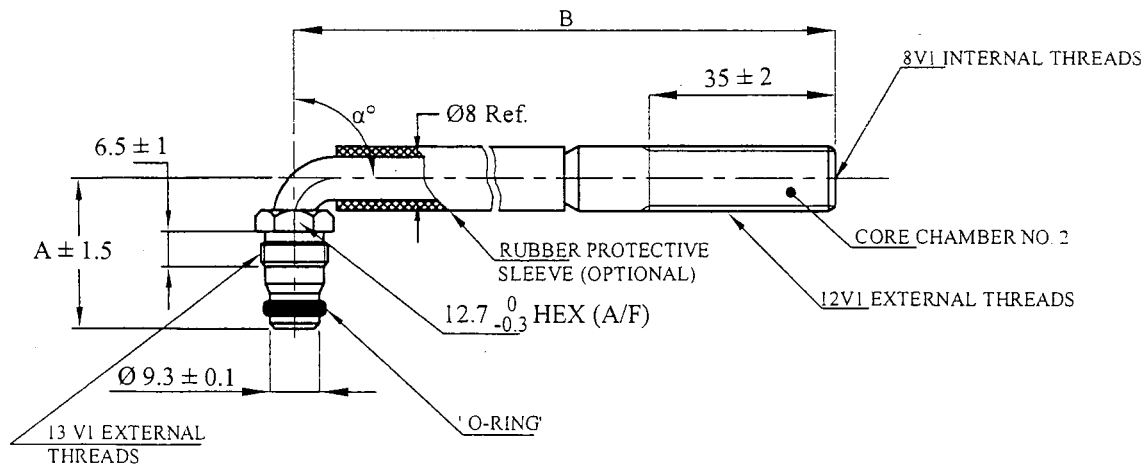
All dimensions in millimetres.

FIG. 27 TUBE SPUD L 08 6 B4



All dimensions in millimetres.

FIG. 28 LARGE BORE SCREW-ON TUBE VALVES — ASSEMBLY

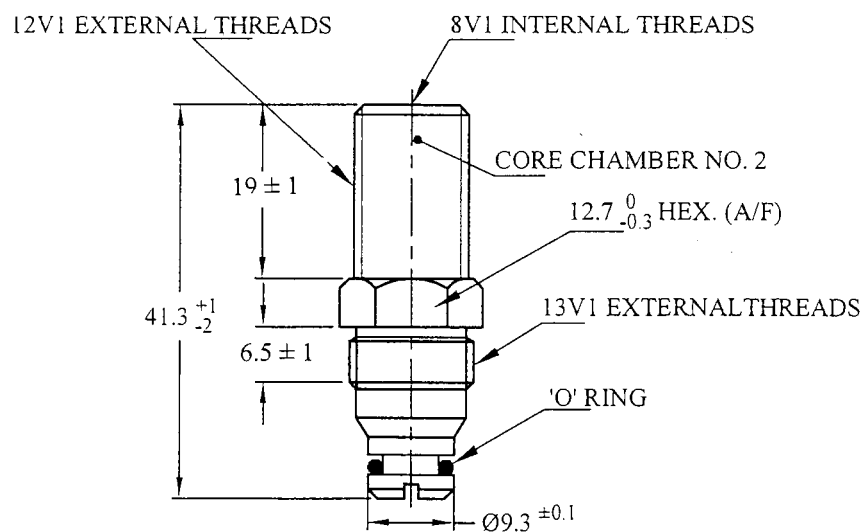


Valve Designation	$\alpha^\circ$	A	B
R 79 6 09 SB	80	27	79
R B9 6 09 SB	90	32	119

NOTE — These swivel stems to be assembled with tubeless spud S 17 7 27 to be available standard lengths and 12.5 mm increment (dimension B).

All dimensions in millimetres.

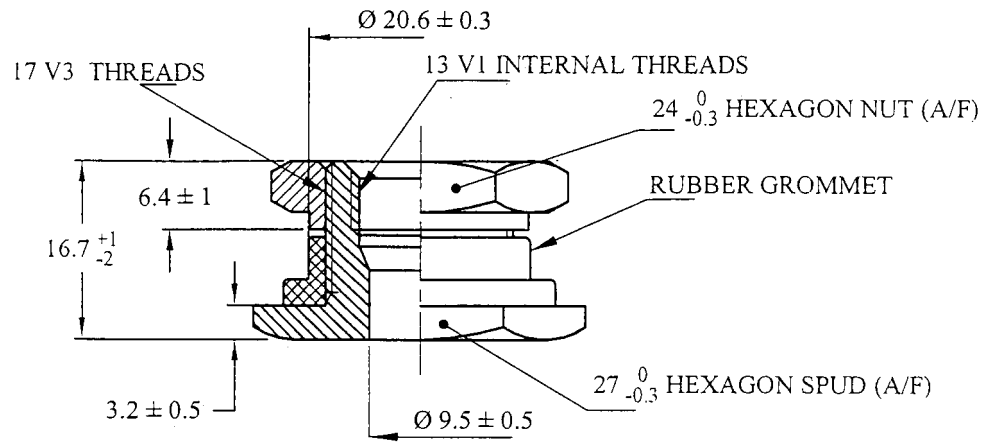
FIG. 29 LARGE BORE SCREW-ON TUBE VALVES (OTR) R 79 6 09 SB AND R B9 6 09 SB SWIVEL TYPE SINGLE BEND



NOTE — This straight stem to be assembled with tubeless spud S 17 7 27.

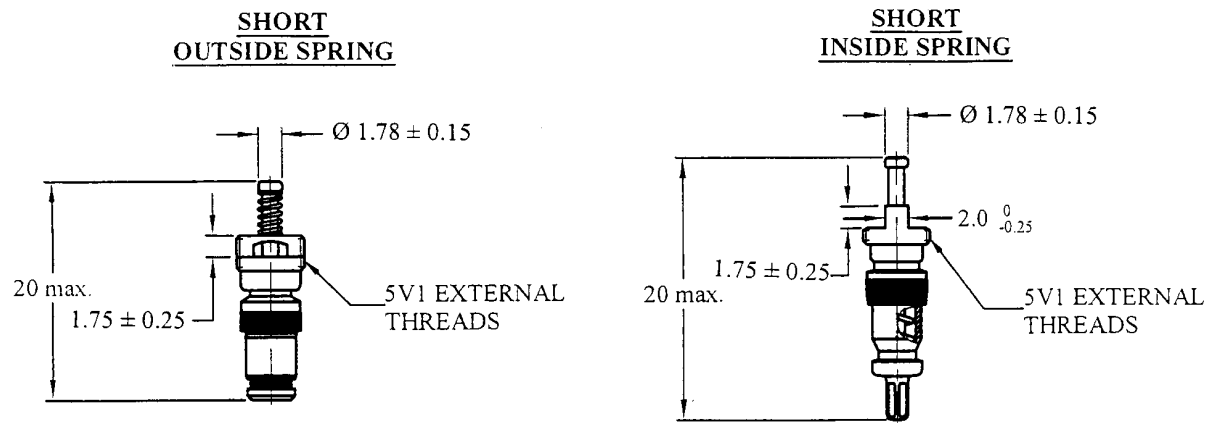
All dimensions in millimetres.

FIG. 30 LARGE BORE (OTR) VALVE R 41 6 09 STRAIGHT TYPE



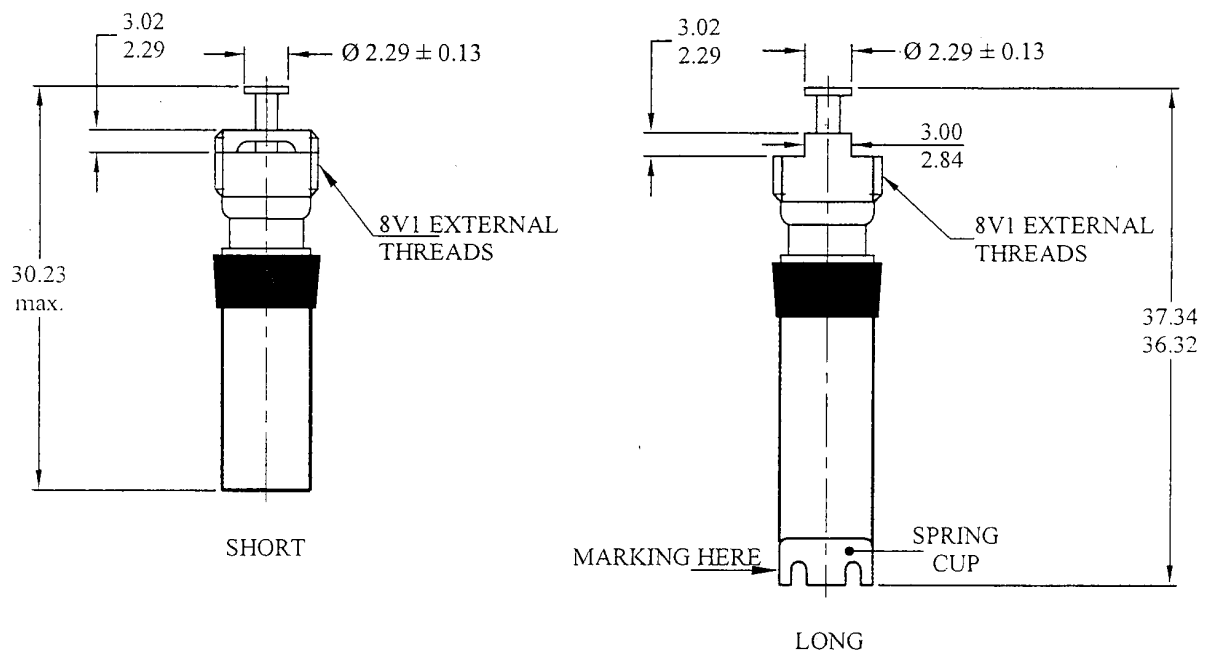
All dimensions in millimetres.

FIG. 31 LARGE BORE (OTR) SPUD (TUBELESS SPUD) S 17 7 27



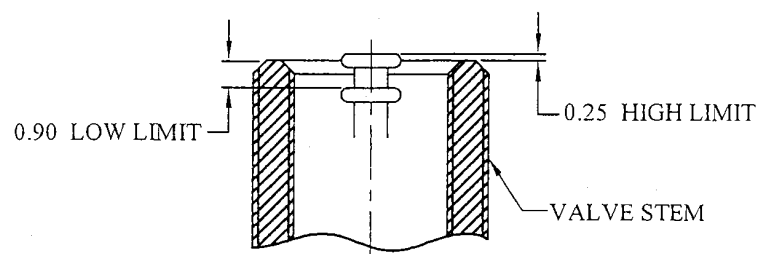
NOTE — Recommended torque at installation 0.23 to 0.56 Nm.

(A) Type 1 Valve Core — Standard Bore



NOTE — Recommended torque at installation 0.34 to 0.56 Nm.

(B) Type 2 Valve Core — Large Bore



(C) Core Pin Head Position — Type 1 and Type 2

All dimensions in millimetres.

FIG. 32 VALVE CORE

**ANNEX A***(Foreword)***VALVE DESIGNATION CROSS REFERENCE**

<b>Sl No.</b>	<b>BIS Code</b>	<b>TR Code Cross Reference</b>	<b>Fig. No.</b>	<b>Sl No.</b>	<b>BIS Code</b>	<b>TR Code Cross Reference</b>	<b>Fig. No.</b>
1	A 65 5 82	TR 227	2	26	F 67 3 19	TR 423	17
2	A 83 5 82	TR 274A	2	27	F 49 3 19	TR 414L	17
3	A 97 5 82	TR 75A	2	28	F 35 5 24	TR 415	17
4	AA 6 5 82	TR 76A	2	29	F 54 5 24	TR 425	17
5	A B1 5 82	—	2	30	F 35 1 16	TR 438	17
6	A B4 5 82	TR 177A	2	31	A 41 1 45	—	20
7	A C3 5 82	TR 77A	2	32	A 50 1 45	—	21
8	A D4 5 82	TR 175A	2	33	A 29 1 25	—	22
9	A E7 5 82	TR 78A	2	34	A 29 1 32	—	23
10	A GO 5 82	TR 179A	2	35	A 29 1 45	—	24
11	B 90 5 57	TR 150	10	36	E D4 6 32	TR J 1175A-M	25
12	B 20 5 63	TR 218A	11	37	E D4 6 32 SB	TR J 1175C-M	25
13	B 30 5 63	TR 220A	12	38	E 49 6 32	TR J1014-M	26
14	CH3	TR CH3	13	39	L 08 6 B4	TR SP 1000	27
15	B 35 3 57	TR 13	15	40	R 79 6 09 SB	TR J 650	29
16	B 35 4 57	TR 14	15	41	R B9 6 09 SB	TR J 651	29
17	B 35 5 57	TR 15	15	42	R 41 6 09	TR J 670	30
18	B 49 5 57	TR 25	15	43	S 17 7 27	TR SP2	31
19	B 35 1 57	—	15	44	TYPE 1-SHORT	TR C1 SHORT	32
20	B 57 3 57	—	16	45	TYPE 2-SHORT	TR C2 SHORT	32
21	B 46 3 57	—	16	46	TYPE 2-LONG	TR C2 LONG	32
22	F 25 3 19	TR 412	17		<b>BIS Code</b>	<b>ETRTO Code Cross Reference</b>	
23	F 35 3 19	TR 413	17	47	A 47 2 45	V1.08.1	18
24	F 41 3 19	TR 414	17	48	A 40 2 45	V1.08.3	19
25	F 54 3 19	TR 418	17				



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##### Headquarters:

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